

UNIVERSITY OF CALIFORNIA.

AGRICULTURAL EXPERIMENT STATION.

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[In order to render the results of investigations and experiments conducted by the Agricultural Department of the University of California more quickly and more generally available than has heretofore been done through the annual or biennial reports, it is proposed to embody hereafter, in the form of "Bulletins," to be issued as often as may seem desirable, reports of results, as well as such other discussions, information or answers to questions as may be of general interest. It is intended to make these bulletins, as a rule, short enough for insertion in the daily or weekly papers of the State, and proof-slips of the same will be regularly mailed to papers applying therefor. The substance of these bulletins will ultimately be embodied in a more complete and connected form, in the annual reports of the College of Agriculture.]

Analyses of Santa Clara Valley Red Wines.

As it is of great interest to viticulturists to know what is likely to be the prevalent character of the wines of each region or locality, so as to adapt their blends to the production of definite qualities, I give below a table of the analyses of wines from the Santa Clara valley made thus far; excluding therefrom some cases in which the wines were either not sound or manifestly not what they claimed to be, in kind. Some of these analyses have, of course, been given in previous bulletins and reports, but they are here placed alongside of later results which complement them without, however, being as yet sufficiently numerous to be finally conclusive.

It is hardly necessary to repeat here, as regards the claims of chemical analysis in showing the character of wines for purposes of blending, that analysis can only determine certain conditions which *must* be fulfilled in a successful blend; but cannot speak of the flavors which must likewise be harmonized in order to render a wine palatable. The taster must of necessity be the ultimate arbiter in the premises.

As regards, first, the Zinfandels, the conclusion previously reached (see Bulletin No. 12), that those of the Santa Clara region are of exceptionally heavy *body*, as compared with those of the Napa and Sonoma valley lands, is confirmed; viz., a little over 3 per cent, against an average of 2.3 in the latter. The difference is so great that it strikes the taste at once; and parallel with it runs the always intense *color* of the Santa Clara Zinfandels, which seems to exceed, in general, that of any other region in the State, even where, as in the hill Zinfandels of Napa, Santa Rosa and Cloverdale, the body reaches nearly the average of 3 per cent. The *alcoholic strength* also reaches an exceptionally high average, that of 13.6, against 11.3 for all Zinfandels of Napa and Sonoma, and 13.2 for the hill Zinfandels alone of the latter counties. As regards *tannin*, there seems to be a difference between the wines from the deep gravelly loam lands of the western border of the valley, and those from the dark adobes of the eastern; the former showing in two cases quite a high proportion of tannin, while the Mission San Jose wines range rather low. In *acid* the average of the five Santa Clara Zinfandels runs nearly 1 pro mille above the average of eleven from Napa and Sonoma (.630 against .537).

If this comparison be taken as representing approximately the relations of the two regions to each other as to the product of the Zinfandel vine, it would appear that notwithstanding its location so near the coast, and more or less under the influence of the summer fogs, the Santa Clara valley represents in most of the above points regions having a much hotter climate; for its Zinfandels run with those of Stockton and Fresno, and are more of a Burgundy than of a claret type, save in one particular, viz., that of acid. The average of seven Zinfandel wines from the great valley (Stockton and Fresno) is .488 of acid, against the above, .630, from the Santa Clara valley.

While tastes may differ as to which of the two is the preferable average, it is well estab-

ANALYSES OF SANTA CLARA VALLEY RED WINES.

VARIETY.	Grower.	Locality.	Vintage.	Body.	ALCOHOL.		Tannin.	Acid as Tartaric	Ash.
					By Weight.	By Volume.			
Zinfandel.....	J. Gallegos.....	Mission San Jose.....	1881	3.19	11.69	14.30	.040	.730	.260
Zinfandel.....	J. Gallegos.....	Mission San Jose.....	1882	2.94	10.81	13.27	.079	.590	.280
Zinfandel.....	J. T. Doyle.....	Cupertino.....	1884	3.44	10.54	13.00	.077	.592	.344
Zinfandel.....	J. T. Doyle.....	Cupertino.....	1883	3.07	11.62	14.20	.128	.543	.276
Zinfandel.....	J. B. J. Portal.....	West San Jose.....	1883	3.07	11.08	13.54	.168	.690	.266
Mataro.....	apt. Merithew.....	San Jose.....	1883	2.26	7.23	9.00	.080	.533	.246
Mataro.....	Jesuit Fathers.....	Santa Clara.....	1883	2.44	7.50	9.37	.073	.315	.346
Mataro.....	J. B. J. Portal.....	West San Jose.....	1883	2.18	9.85	12.30	.100	.375	.266
Mataro.....	J. B. J. Portal.....	West San Jose.....	1884	2.90	9.92	12.36	.138	.600	.200
Malbec.....	Chas. Le Franc.....	West San Jose.....	1884	3.62	9.99	12.45	.172	.461	.446
Malbec.....	J. T. Doyle.....	Cupertino.....	1883	3.59	11.15	13.63	.240	.345	.355
Charbono, No. 1.....	J. T. Doyle.....	Cupertino.....	1884	2.84	8.34	10.40	.175	.506	.453
Charbono, No. 2.....	J. T. Doyle.....	Cupertino.....	1884	2.84	7.99	10.00	.200	.507	.409
*Charbono.....	H. M. Naglee.....	San Jose.....	1880	1.53	5.21	6.50	Not det'd.	.442	.319
Grenache.....	J. B. J. Portal.....	West San Jose.....	1883	2.17	9.78	12.17	.093	.543	.219
*Grenache.....	Wm. Pfeffer.....	Guberville.....	1884	1.93	7.43	9.27	.065	.532	.277
Grenache.....	Chas. Le Franc.....	West San Jose.....	1876	2.49	9.36	11.60	Not det'd.	.792	.364
Cabernet Fr nc (?).....	J. B. J. Portal.....	West San Jose.....	1884	3.02	9.78	12.18	.110	.490	.270
*Cabernet Franc (?).....	Wm. Pfeffer.....	Guberville.....	1884	2.13	8.48	10.58	.070	.607	.293
Burgundy.....	J. B. J. Portal.....	West San Jose.....	1883	2.45	9.70	12.10	.073	.750	.277
Carignan.....	J. B. J. Portal.....	West San Jose.....	1883	2.06	9.27	11.54	.055	.627	.227
Ploussard.....	J. B. J. Portal.....	West San Jose.....	1884	2.77	10.69	13.12	.091	.543	.273
Malvoisie.....	J. T. Doyle.....	Cupertino.....	1884	2.05	7.64	9.54	.050	.590	.250
Malvoisie.....	J. Gallegos.....	Mission San Jose.....	1883	2.43	9.27	11.54	Slight.	.467	.220
Trousseau.....	J. T. Doyle.....	Cupertino.....	1883	2.69	11.15	13.50	.040	.600	.447
*Trousseau.....	Wm. Pfeffer.....	Guberville.....	1884	2.28	9.92	11.64	.050	.474	.349

— *Wines made at the University Viticultural Laboratory.

lished that wines of very heavy body and alcoholic strength acquire a special zest from the presence of a large proportion of acid, which in lighter wines would be considered excessive.

The question naturally arises whether what is true of the Zinfandel holds good also with other grape varieties; whether, in other words, there is in the Santa Clara valley a *general* tendency to the above characteristics, that should be taken into account in proportioning the grape varieties intended to produce *e. g.* a moderately light table claret, such as is usually desired by those accustomed to its use.

The data thus far at hand are too scanty to determine this question definitely; but in reviewing such as we have, there appears to be reason for the belief that what is true of the Zinfandel holds also, more or less, as regards other wine grapes now grown in the Santa Clara valley.

Taking first the Mataro, we unfortunately have no means of comparing its wines with those from other localities. But it will be noted that not only in general, but for corresponding vintages and localities, the Mataro has a notably lighter body as well as lower alcoholic contents and lower acid than the Zinfandels. It is therefore in these respects a very proper blend for the heavy Zinfandels, with a view to modifying them for table use; and as the two wines are perfectly harmonious in taste, this will doubtless be one of the prominent blends in the future. But it must be remembered that the Mataro carries no larger proportion of tannin than the average Zinfandel, so that where the latter is deficient a third, tannin-bearing grape should enter into the combination. ^A

glance at the tannin column above shows that of the varieties represented, the Malbeck and the Charbono (from LeFranc and Doyle, West Side) are the ones pre-eminently adapted to this use, their tannin contents ranging from 17.2 ten thousandths to 24.0. The innate and invincible coarseness of the Charbono excludes it from use in the better class of blends; but the Malbeck is eminently the third ingredient needed, both for tannin and for the modification of the Zinfandel peculiarities; its character being decided and harmonious, and its acid low and mild. In the future, the Grossblau, Tannat, and perhaps Crabb's Burgundy, will

take their place in the combination, to suit the various tastes of consumers. It should be noted that of all wines in the table the Malbeck shows, from both localities, the heaviest body (3.61 per cent); it has also a very intense color. In last year's vintage from Folsom, Malbeck showed only 2.63 of body and 10 ten-thousandths of tannin.

It is instructive to note that Portal's and Pfeffer's Cabernet, which has been claimed as simply a variety of the Malbeck or Cot, differs remarkably in composition from the true Malbecks of the valley; having a much lower body and tannin, so that, however high their general quality, they cannot take the place of the Malbeck in blends, and in fact themselves need the latter, or some equivalent, to eke out the tannin. I doubt that their most profitable use will be found to lie in the direction of blends with the Zinfandel, which is too pronounced in character not to overshadow the delicate qualities of the Cabernets, whose natural combinations would be rather with the Malbeck, Ploussard and

Merlot for high quality wines, and with Verdot for the commoner sorts.

The low body and relatively low alcoholic contents of Grenache and Carignan wines seem to justify their use for Zinfandel blends alongside of Mataro, as has been customary; the more as their defects of color will not make any difference in the intensely-tinted Zinfandels of the Santa Clara valley. But both are high in acid, and thus do not modify to the desirable extent the sharp acidity of the Zinfandel; nor does the latter, to many persons' taste, blend agreeably with the burnt-sugar flavor of the Grenache.

The Trousseau and Malvoisie wines of the valley do not appear to differ materially from those of other regions, save that, as noted in a former bulletin, the Trousseau seems to be remarkably low in tannin here, as the Malvoisie is everywhere. The latter is hardly to be taken into consideration as a material for dry wines in this region; the Trousseau must evidently, when so used, be blended with other grapes having an adequate astringency; while in the great valley it seems to be provided with tannin almost as fully as the Zinfandels.

E. W. HILGARD.

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